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NOTES ON SOME EASTERN PACIFIC STOMATOPOD
CRUSTACEA, WITH DESCRIPTIONS OF A NEW
GENUS AND TWO NEW SPECIES OF
LYSIOSQUILLIDAE

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Part of the material upon which this report is based was collected off Panamá, Colombia, and Ecuador in 1961 by the Argosy Expedition, sponsored by Alfred C. Glassell and carried out by staff members and students of the Rosenstiel School of Marine and Atmospheric Sciences, University of Miami, Florida. The collection includes two undescribed species of *Coronida*, one of which had been known previously but had not been recognized as a distinct species, and five species already known from the Eastern Pacific. Background on the expedition has been published by DeSylva (1972), and station data and a list of the species taken at each station are summarized here in Table 1. These materials were supplemented in the present study with additional material of *Coronida* from the Eastern Pacific region.

The five species previously known from the Eastern Pacific which are represented in the Argosy collection are: *Gonodactylus bahiahondensis* Schmitt, 1940, *Gonodactylus zacae* Manning, 1972a, *Pseudosquilla adiantata* Manning, 1964 (Family Gonodactylidae), *Meiosquilla oculinova* (Glassell, 1942), and *Squilla hancocki* Schmitt, 1940 (Family Squillidae). The records for the first four of these species from La Plata Island are extensions of range for these species to the south as well as their first occurrence off that island. *Meiosquilla oculinova*, one of the rarest of the Eastern Pacific species, is represented in the collection by 10 specimens from Panamá, Colombia,

and La Plata Island, Ecuador; it previously was known from two specimens taken from Chamela Bay and Manzanillo, Mexico. Additional records for and illustrations of these five species may be found in the papers cited above as well as in Manning (1972c, 1974).

In addition to describing two new species from the Argosy collection, the opportunity is taken to transfer *Coronida cocosiana* Manning, 1972b, the only other Eastern Pacific stomatopod referred to that genus, to a new genus, *Neocoronida*, defined herein.

Measurements given in Table 1 are total length (TL), measured from the anterior margin of the rostral plate to the apices of the submedian teeth of the telson. Carapace length is measured in the midline, and does not include the rostral plate. All measurements are in mm. Most of the material has been deposited in the collections of the National Museum of Natural History, Smithsonian Institution (USNM). Some of the specimens of one of the new species of *Coronida*, including the holotype, are in the collection of the Allan Hancock Foundation (AHF). The illustrations were prepared by my wife Lilly. I thank Janet Haig, Curator of Crustacea at the Allan Hancock Foundation, for the loan of all of their material of *Coronida* for inclusion in this report.

***Neocoronida*, new genus**

Definition: Size small to moderate, TL 50 mm or less; body depressed, loosely articulated, most of dorsal surface smooth; eye triangular, cornea strongly bilobed, ocular scales produced into 2 separate subquadrate lobes; rostral plate rounded or subrectangular; antennal protopod with 1 ventral papilla; carapace narrowed anteriorly, carinae and spines absent, cervical groove indicated on lateral plates only; exposed thoracic somites lacking longitudinal carinae, eighth somite lacking longitudinal median ventral keel; mandibular palp and 5 epipods present; propodi of third and fourth maxillipeds broader than long, lacking marked ventral ribbing; raptorial claw stout, small, dactylus inflated basally, armed with 4 teeth; propodus of claw with proximal $\frac{2}{3}$ of opposable margin pectinate, with 3 movable spines basally; dorsal ridge of carpus of claw terminating in 2 teeth; ischiomerall articulation of claw terminal, merus longer than ischium; endopods of walking legs 2-segmented, strap-shaped on all legs; abdomen depressed, articulated anterolateral plates present; anterior 4 somites lacking sharp carinae or spines, fifth somite with posterior half roughened dorsally and with

TABLE 1. Station data and list of stomatopods taken at each station by the Argosy Expedition.

Station	Date 1961	Location	Depth	Habitat	Species
13	10 Sept.	Panamá, Pinas Bay, cove in west part of harbor; 07°35.5'N, 78°12'W	20'-30' (6.1-9.2 m)	bedrock, boulders, gravel, sand	<i>G. bahiahondensis</i> <i>M. oculinova</i>
16	12 Sept.	Panamá, 200' E of Morro de Pinas, north of Pinas Bay; 07°32.5'N, 78°13'W	12'-60' (3.7-18.3 m)	rocks with crevices	<i>M. oculinova</i>
23	16 Sept.	Colombia, Bahía Solano, 4 mi NW of Ciudad Mitú; 06°16.5'N, 77°25'W	0'-15' (0-4.6 m)	hard bedrock, boulder, rubble	<i>M. oculinova</i>
27	21 Sept.	Colombia, Gorgona Island, NE tip; 03°00.5'N, 78°11'W	35'-42' (10.7-12.8 m)	coral, sand, rubble, detritus	<i>G. bahiahondensis</i> <i>P. adastalta</i> <i>C. glasselli</i> , n. sp.
34	22 Sept.	Colombia, Gorgona Island, ¼ mi NNE of Punta Mona; 02°57.5'N, 78°12'W	15'-20' (4.6-6.1 m)	branching coral, some coral heads	<i>G. bahiahondensis</i> <i>P. adastalta</i>
38	23 Sept	Colombia, 5 mi S of Gorgona Island; 02°39'N, 78°38'W	300' (91.5 m)		<i>S. hancocki</i>
58	30 Oct.	Ecuador, La Plata Island, NE part, 01°15.5'S, 81°05'W	10'-20' (3.1-6.1 m)	silt, coral stacks, debris	<i>G. bahiahondensis</i> <i>P. adastalta</i>
68	6 Oct.	Ecuador, La Plata Island, NE part, 01°16'S, 81°05'W	8'-20' (2.4-6.1 m)	boulders, talus, talus debris	<i>G. zacae</i> <i>P. adastalta</i> <i>C. schmitti</i> , n. sp.
71	7 Oct.	Ecuador, La Plata Island, NE side, 01°15.5'S, 81°05'W	30'-90' (9.2-27.6 m)	coral, silt, sand in deeper water	<i>M. oculinova</i>

posterior spinules; sixth somite completely covered dorsally with tubercles and with sharp, ventrally directed process anterior to articulation of each uropod; telson broader than long, surface completely covered with irregular tubercles; posterior margin of telson without median spine or submedian denticles, with movable submedian teeth as well as other sharp and blunt teeth laterally; uropod flattened, basal segment with distal, dorsal spine and numerous dorsal tubercles; proximal segment of uropodal exopod with blunt movable spines on outer surface, inner margin setose; endopod of uropod lacking strong fold proximally on outer margin; basal prolongation of uropod produced into 2 flattened, divergent spines, inner longer, with row of sharp spinules on inner margin.

Type-species: *Neocoronida cocosiana* (Manning, 1972b).

Name: The name has been formed by combining the Greek prefix, neo-, with the generic name *Coronida*. The gender is feminine.

Remarks: *Neocoronida* superficially resembles *Coronida*, but differs in several important respects: the ocular scales are produced into 2 large, subacute lobes, almost as wide as the rostral plate instead of being fused into an inconspicuous bilobed plate as in *Coronida*; the propodi of the third and fourth maxillipeds lack the prominent ventral ribbing found in *Coronida*; the marginal armature of the telson is quite different, for there is no posterior median spine and there are fewer fixed marginal teeth lateral to the movable submedians; and the basal prolongation of the uropod is very different, being a flattened process terminating in 2 divergent spines with a row of spinules on its inner margin rather than 2 triangular, subparallel spines lacking the inner row of spinules.

Neocoronida contains only two species, *N. trachurus* (Von Martens, 1881) (see Holthuis, 1967, for references), from the Red Sea, Mauritius, and Palau, Caroline Islands, and *N. cocosiana* (Manning), from Cocos Island in the Eastern Pacific.

***Coronida glasselli*, new species**

Figure 1

Material: Gorgona Island, Colombia; Argosy Sta. 27: 2♂ TL 19 and 36 mm; larger is holotype (USNM 125328), smaller is paratype (USNM 125329).

Description: Eye (Fig. 1a) elongate; cornea bilobed, slightly broader than stalk and set obliquely on it; eyes not extending to end of second segment of antennular peduncle; ocular scales fused into bilobed plate.

Antennular peduncle short, less than half as long as carapace; antennular processes produced into slender, triangular spines, directed anteriorly; shortest antennular flagellum with 10–25 segments.

Antennal scale small, ovate, about $\frac{1}{2}$ as long as carapace; distal segment of protopod with short anterointernal spine; protopod with 1 ventral papilla.

Rostral plate (Fig. 1a) subquadrate, broader than long, lateral margins

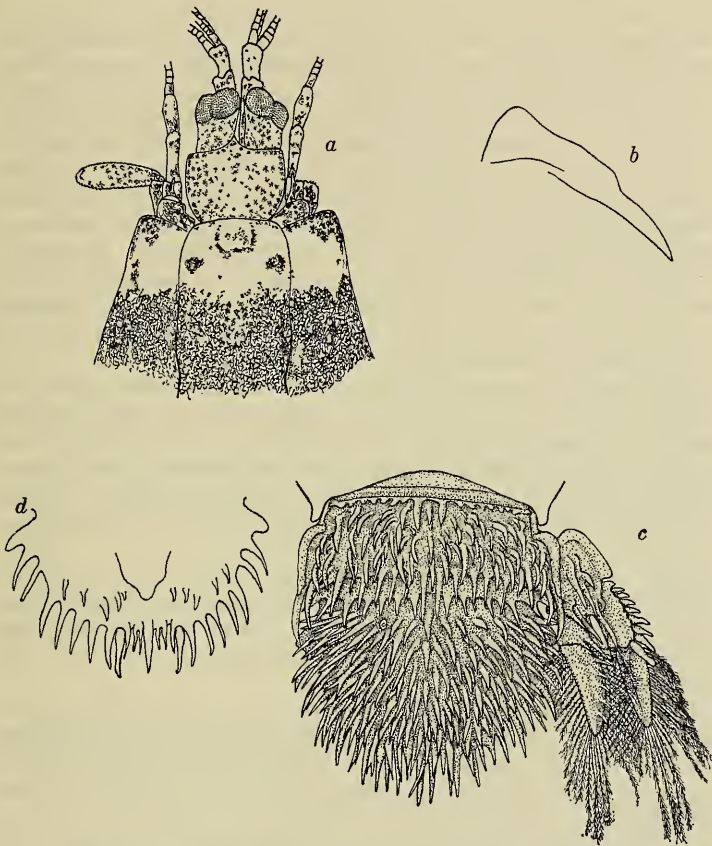


FIG. 1. *Coronida glasselli*, new species, male holotype, TL 36 mm: a, Anterior portion of body (setae omitted); b, Margin of sixth abdominal somite, lateral view; c, Sixth abdominal somite, telson, and uropod; d, Telson, ventral view.

convex, anterolateral angles rounded; anterior margins straight; apex acute.

Dactylus of claw with 4 teeth; outer margin of dactylus inflated.

Mandibular palp and 5 epipods present.

Abdomen smooth, depressed, loosely articulated, anterior 5 somites unarmed dorsally, fifth somite unarmed posteriorly; sixth somite (Fig. 1c) completely covered with long, erect spines, inclined posteriorly, with 4-6 spines present on any antero-posterior line on somite; anterior margin of sixth somite with pair of broad, flattened, submedian projections,

flanked laterally by 4–6 smaller, rounded projections, no more than 14 projections present on anterior margin of somite; lateral margin of sixth somite (Fig. 1*b*) a broad carina, tapering distally, continuing into strong posterolateral spine (bifurcate in smaller specimen), posterior half of ridge lower than anterior half; posterior margin of sixth somite with 13–14 erect spines, slightly inclined but not directly posteriorly.

Telson (Figs. 1*c,d*) broader than long, dorsal surface completely covered with long, erect spines, all directed dorsally; anterior border of telson with 14–15 erect spines; posterior margin of telson with large median spine, and, on each side, 3 smaller submedian denticles, 1 movable submedian tooth, and 7 large, slender, fixed lateral teeth, separated into a group of 5 and 2 teeth; ventral surface with 2–3 denticles on submedian area, 0–2 denticles on intermediate area, lateral area and carina around anal pore unarmed.

Basal segment of uropod (Fig. 1*c*) with 6–8 slender, dorsal spines and irregular dorsal carina terminating in erect spine; 2 spines on basal segment overhanging articulation of endopod, 1 erect, 1 directed along longitudinal axis of endopod; exopod unarmed dorsally, with 8 short, blunt, movable spines on outer margin of proximal segment; endopod with 5 erect spines on outer dorsal surface; inner spine of basal prolongation much longer than outer.

Color: Anterior appendages speckled with dark chromatophores; middle third of carapace with broad, dark brown band, anterior and posterior margins of carapace light; band of carapace extending onto claw; each body segment dark, mottled; each abdominal somite with posterolateral white spot.

Measurements: Males only known, TL 19–36 mm. Other measurements of male holotype, TL 36 mm: carapace length 6.1; cornea width 1.4; antennal scale length 2.2; rostral plate length 2.1, width 2.4; fifth abdominal somite width 6.7; telson length 5.5, width 6.2 (both approximate).

Discussion: *Coronida glasselli* can be distinguished easily from both *C. bradyi* (A. Milne-Edwards, 1869) from the Cape Verde Islands and the Gulf of Guinea (Manning, in press), and from the other eastern Pacific species of the genus, *C. schmitti*, described below. Both *C. bradyi* and *C. glasselli* can be distinguished from *C. schmitti* by the presence of 2 enlarged submedian prominences on the anterior margin of the sixth abdominal somite; these are always absent in *C. schmitti*, present in all specimens examined of the other 2 species. *Coronida glasselli* can be distinguished from *C. bradyi*, which it closely resembles, by the following features: (1) the shorter antennular flagellum is composed of 25 segments in the adult (10 segments in the younger male) whereas in *C. bradyi* it is composed of 10–16 segments in adults, 6–16 segments in specimens of all sizes; (2) in *C. glasselli* there are 2 spines overhanging the articulation of the uropodal endopod, whereas only 1 erect spine is present there in *C. bradyi*; and (3) in *C. glasselli* the segments of the uropodal exopod are unarmed dorsally whereas in

C. bradyi the distal segment is always armed with 1–2 small, erect dorsal spinules.

The smaller paratype of *C. glasselli* differs from the holotype in having the posterolateral spines of the sixth abdominal somite bifurcate; in other respects the 2 specimens are very similar.

Other differences between *C. glasselli* and *C. schmitti* are discussed below under the account of the latter species.

It is clear that the number of segments on the antennular flagellum increases with age at least to some extent. In the material from Annobón Island in the Gulf of Guinea used for comparison, a female of *C. bradyi*, CL 6.3 mm, has but 10 segments on the shorter flagellum in comparison with the holotype of *C. glasselli*, a male, CL 6.1 mm, in which the flagellum comprises 25 segments.

The obvious similarities between this new species and the eastern Atlantic *C. bradyi* add convincingly to the evidence for an earlier, distinct Atlanto-East-Pacific shallow-water marine fauna (Ekman, 1953; Briggs, 1974). The distribution of these two species of *Coronida* parallels that of *Squilla aculeata* Bigelow which has subspecies in the eastern Pacific (*S. a. aculeata*) and eastern Atlantic (*S. a. calmani* Holthuis) (Manning, 1970), and, like *Coronida*, does not occur in the western Atlantic.

This species is named for Alfred C. Glassell, Jr., the generous sponsor of the Argosy Expedition.

Coronida schmitti, new species

Figure 2

Coronida bradyi.—Schmitt, 1940: 202, fig. 24 [not *Coronida bradyi* (A. Milne-Edwards, 1869)].

Material: Tagus Cove, Albemarle Island, Galápagos Islands; 12–15 fms (22–27 m); AHF Sta. 148–34; 13 January 1934: 4 lots, ♀ TL 31 mm, holotype (AHF); 4 ♂ TL 17–25 mm, 6 ♀ TL 15–33 mm, paratypes (AHF); 6 ♂ TL 13–29 mm, 3 ♀ TL 26–34 mm, paratypes (USNM 76034); 1 ♀ TL 48 mm (figured; USNM 76035).—Same locality; 20 fms (37 m); AHF Sta. 149–34; 13 January 1934: 2 lots, 1 ♂ TL 26 mm, 2 ♀ (one broken) TL 36.5 mm, paratypes (AHF); 2 ♀ TL 19–33 mm, paratypes (USNM 76036).—Sullivan Bay, James Island, Galápagos Islands; 50–70 fms (92–128 m); AHF Sta. 183–34: (2 lots), 1 ♂ TL 27 mm, 1 ♀ TL 30 mm, paratypes (AHF); 1 ♂ TL 29 mm, 1 ♀ TL 22 mm, paratypes (USNM 76039).—Charles Island, Galápagos Islands; 8–10 fms (15–18 m); 29 January 1934; AHF Sta. 196–34: 1 ♀ TL 31 mm, paratype (AHF).—La Plata Island, Ecuador; Argosy Sta. 68; 1 ♂ TL 20 mm, paratype (USNM 125331).—San Cristobal Bay, Baja California, Mexico; 7.5 fms (14 m); "Searcher" Sta. 271; 24 October 1971: 1 ♂ TL 44 mm, paratype (AHF).

Description: Eye (Figs. 2a,b) elongate, cornea bilobed, broader than

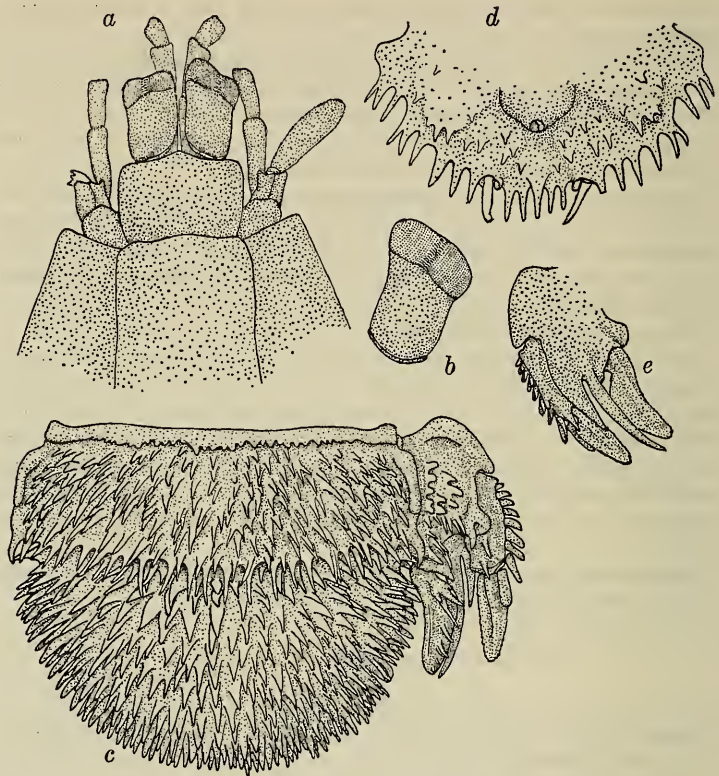


FIG. 2. *Coronida schmitti*, new species, female paratype, USNM 76035, TL 48 mm: *a*, Anterior portion of body; *b*, Eye; *c*, Sixth abdominal somite, telson, and uropod; *d*, Telson, ventral view; *e*, Uropod, ventral view. (Setae omitted in all figures).

and set obliquely on stalk; eyes not extending to end of second segment of antennular peduncle; ocular scales fused into bilobed plate.

Antennular peduncle short, about half as long as carapace; antennular processes produced into slender, triangular spines, directed anteriorly; shortest flagellum with 4-17 segments.

Antennal scale small, ovate, about $\frac{1}{3}$ as long as carapace; distal segment of protopod with short, anterointernal spine; protopod with 1 ventral papilla.

Rostral plate (Fig. 2*a*) subquadrate, broader than long, lateral margins convex, anterolateral angles broadly rounded; anterior margins, lateral to obtusely pointed apex, straight or slightly concave; plate lacking dorsal carina.

Dactylus of claw with 4 teeth, outer margin of dactylus inflated.

Mandibular palp and 5 epipods present.

Abdomen smooth, flattened, loosely articulated, anterior 5 somites unarmed dorsally; fifth somite with 0-4 spines laterally on posterior margin; sixth somite (Fig. 2c) completely covered with erect, posteriorly inclined spines, 6-8 spines present on any anteroposterior line on the somite; anterior margin of sixth somite with 14-34 (usually more than 20 on specimens larger than 20 mm), sharp, erect spines, lacking enlarged submedian projections; anterior part of lateral margin of sixth somite higher than posterior, margin unarmed dorsally, lower, posterior part of carina terminating in sharp spine; posterior margin of sixth somite with spines directed both dorsally and posteriorly.

Telson (Figs. 2c,d) broader than long; dorsal surface completely covered with long, erect spines, none directed posteriorly; marginal armature of telson consisting of a large median spine, and, on each side, 2-3 smaller submedian spines, 1 movable submedian tooth, and 6-7 large, slender fixed lateral teeth, usually arranged in intermediate group of 5 lateral group of 2, fifth and seventh teeth often bifurcate; ventral surface of telson with denticles on submedian and intermediate areas; carina flanking anal pore unarmed.

Basal segment of uropod (Fig. 2c) with 15-25 slender, dorsal spines and irregular dorsal carina terminating in erect spine; 1 spine on basal segment overhanging articulation of endopod; exopod with 1-3 fixed dorsal spines and 8-9 blunt, movable spines laterally on proximal segment, distal segment unarmed; endopod with 6-7 erect dorsal spines; inner spine of basal prolongation of uropod (Fig. 2e) longer than outer.

Color: Similar to that reported for other species of the genus, with light background and mottled brown pigment, including a broad, dark band on the carapace extending onto claws. The pattern was figured in Schmitt (1940, fig. 24).

Measurements: Males, TL 13-44 mm; females, TL 15-48 mm. Other measurements of female holotype, TL 31 mm; carapace length 6.2; cornea width 1.3; antennal scale length 2.0; rostral plate length 1.7, width 2.5; fifth abdominal somite width 6.9; telson 3.8, width 6.7 (both approximate).

Discussion: *Coronida schmitti* differs from both of the other species of *Coronida* in numerous features, as follows: there are no enlarged submedian projections on the anterior margin of the sixth abdominal somite; there are more dorsal spines on the sixth abdominal somite and telson; the posterior margin of the sixth abdominal somite is lined with both dorsally and posteriorly directed spines; and there are more erect spines on the basal segment of the uropod as well as on the proximal segment of the uropodal exopod. This species can be separated from either *C. bradyi* or *C. glasselli* by the absence of the enlarged pair of submedian projections on the anterior margin of the sixth abdominal somite.

The original figure of this species (Schmitt, 1940, fig. 24) errs in

showing 4 antennal flagella (all stomatopods have 3). Similarly, the original illustration of *C. bradyi* (see A. Milne-Edwards, 1869, pl. 17 fig. 11) also was wrong in showing this same feature.

Coronida schmitti has an interesting distribution pattern in the Eastern Pacific, where it is known to occur in the Gulf of California, at La Plata Island, Ecuador, and in the Galápagos Islands. *Pseudosquilla marmorata* (Lockington, 1877) has a similar distribution pattern, with populations in southern Californian and Galapagan waters, but it is replaced off the South American mainland by another species, *P. lessonii* (Guérin, 1830) (Manning, 1969); *C. schmitti* is not known to occur off the South American mainland.

This species is named for Waldo L. Schmitt, Zoologist Emeritus at the National Museum of Natural History, Smithsonian Institution, whose studies of the extensive stomatopod collections made in the Eastern Pacific by the Allan Hancock Expeditions laid the foundation for current studies on the American fauna.

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